

Know-how. Quality. Delivery on time.



Firmengruppe Wolf

Regensburger Druckgusswerk | Rambold Industries Slovakia | Prec-Cast Zhongshan | Prec-Cast



Wolf Group

Third generation of die-casting expertise

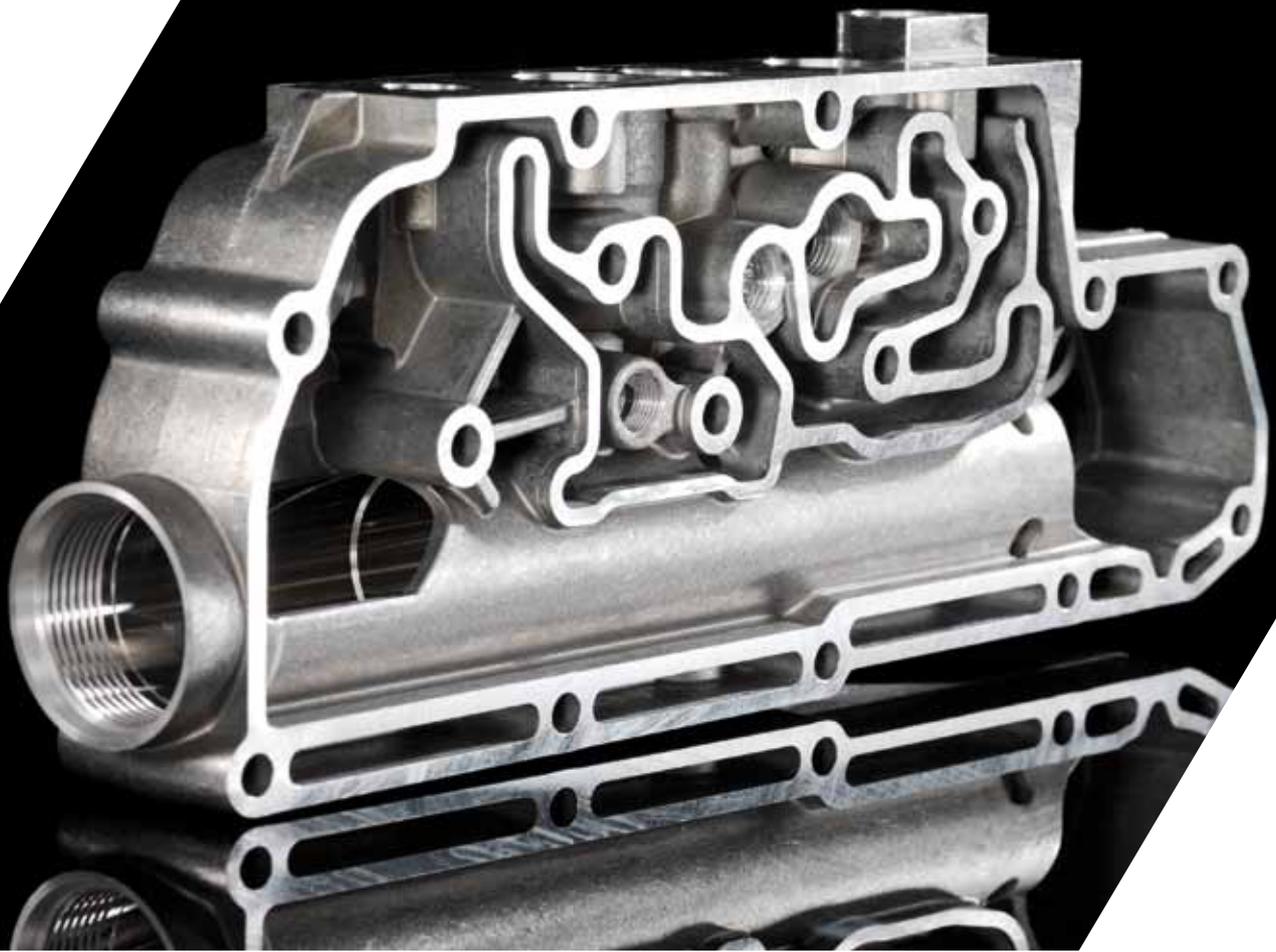
It was quite by chance that the family business, founded in Regensburg in 1933 under the name Elektro Wolf, arrived at zinc die-casting in the post-war period.

Through the addition of aluminium the Regensburger Druckgusswerk developed quickly from 1977 into a dynamic, flourishing foundry. Today, as well as aluminium casting the Wolf Group also produces approximately 5 % of zinc die-casting components for the international automobile and electrical industry. At present the company is in its third generation of 100 % family ownership.

With a high equity-to-assets ratio and a healthy rate of growth in recent years the company is, above all, based on stability and longevity. Investment in plant and machinery and financing of new sites are generated primarily from cash flow. This keeps the Group's ongoing costs at a minimum. Above all the balanced product spectrum from automotive and non-automotive fields and long-standing yet independent customer ties have established the Wolf group as a reliable and crisis-proof partner.

We were able to absorb the impact of the recent economic changes in the market without large scale cutbacks. With our flat hierarchies; rapid decision-making and flexibility we are well placed to respond flexibly and stably to changing market situations.

With a quality management system as well as current ISO/TS 16949 and ISO 14001 certification, the Group is compliant with the global standards of the automobile and electrical industries.



At a glance

- **Founded in 1933 and in full family ownership for three generations**
- **Crisis-proof thanks to wide customer base and high equity ratio**
- **Flexible thanks to flat hierarchy and short decision-making processes**
- **Compliant with international standards for the automobile and electrical industry**
- **ISO/TS 16949 and ISO 14000 certified**





The global family business

Our global sites are the market advantages for our customers

The Wolf Group's global corporate decision making is coordinated centrally at its Regensburg headquarters. The administrative departments of the globally expanding company along with the central development division are based here.

Regensburger Druckgusswerk Wolf is located in a residential area to the west of the growing medieval town. As part of the company's restructuring, a move to an industrial area in the south of the town is planned in the coming years, where a state-of-the-art foundry with large, fully automated die-casting cells producing closing forces in excess of 2000 tonnes will be created.

Approximately 250 km east of Budapest, on the edge of the Tokajer wine region and right on the border with Slovakia the Wolf Group operates its largest plant in the town of Sátorajújhely. The Hungarian Prec-Cast site has been part of the company for over 20 years and through the ongoing expansion of the EU, has become established as a central and increasingly important industrial location in Eastern Europe. Since it was founded in 1989 the site has continually expanded through the introduction of new, state-of-the-art production halls, plant and technologies.





Thanks to the continual exchange of innovations and ideas with the main Regensburg headquarters, Prec-Cast has developed steadily into a self-contained production plant. It has also become a major partner in the Eastern European automobile and electrical industry.

A further Wolf Group site will be established in Slovakia near the Hungarian border. This will support the existing Pre-Cast site in Hungary and will operate state-of-the-art technology and meet the logistical requirements for a modern foundry.

This building project, which has already completed the planning stage, will comprise an industrial park and contribute to the development of the region. In addition, customers, suppliers and other companies can be offered the opportunity to set up a location in a “best price” region.

As well as European sites the global strength of the Wolf Group is expanding through the establishment of the Chinese Prec-Cast Zhong Shan plant. This production plant, due to be completed by the spring of 2010, is located in Southern China, approximately 100 km from Guangzhou.

Prec-Cast Zhongshan was set up as a 100 % owned Group subsidiary. It will produce a range of cast parts as well as raw or mechanically machined products for the Chinese and international markets.



At a glance

- **Headquarters and main site at Regensburg, Germany**
- **Hungarian production plant with state-of-the-art facilities established over 20 years ago**
- **Production in China for the Asian and international markets since 2010**
- **Planned industrial park in Slovakia to strengthen the market position in Eastern Europe**
- **Relocation in Regensburg and creation of a high-tech foundry planned for the medium-term**

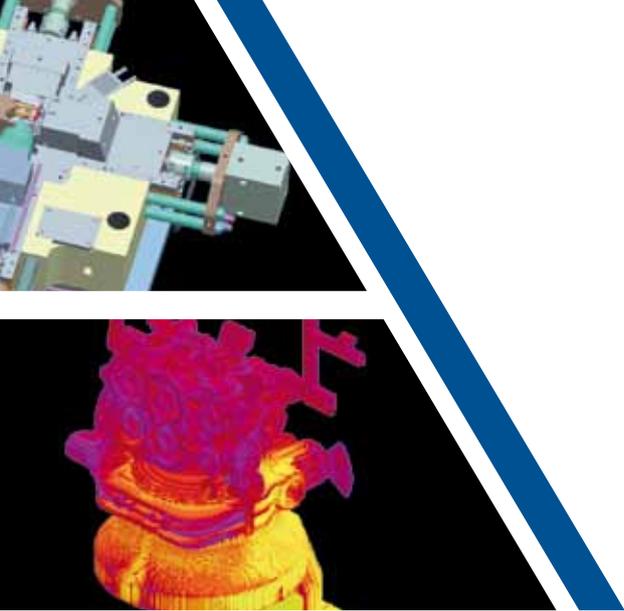
Wolf Group - development partner

Cross-border skills for unrestricted innovation



At a glance

- **Established development partner in the automobile and electrical industries**
- **Provides customers with qualified support throughout the course of simultaneous engineering**
- **International project teams for professional project development**
- **Quick and flexible customer-specific solutions offered**



In recent years the Wolf Group has also established itself as a development partner for its customers. The R&D division based in Regensburg coordinates development projects for both the Group and its Western European customers alike. Using the Pro/Engineer and Unigraphics CAD systems, and with help from qualified external partners, product data; FEM calculations; solidification simulations and tool design can be carried out in very short timescales.

Through simultaneous engineering projects the Wolf Group has developed numerous components from the prototype design stage to series production launch in close collaboration with its customers. The Hungarian development division is also an esteemed partner for Eastern European customers. Continual exchange of ideas and innovations with Regensburg and close collaboration with the Hungarian foundry faculty of the University of Miskolc make the Prec-Cast plant unique in this region.

Through product development carried out over recent years a variety of optimisation projects for processes and products have been launched in addition to solidification simulations in collaboration with the university. These projects have given students from Miskolc the opportunity to carry out their bachelor and diploma theses at Prec-Cast. In return Prec-Cast staff from the foundry, engineering and toolshop have been able to receive ongoing training at the university.

The various plant development divisions are supported by competent project teams which supervise the product lifecycle from prototype to well past SOP into production. Initial technical consultation with the customer is just as much part of the project manager's remit as orderly project and change management. Even after SOP the products are continually refined, serviced and optimised from economic and quality aspects.





The Wolf Group operates its own toolshops at the Regensburg and Sátoraljaújhely sites which contribute to the flexibility and efficiency of the company. Die-cast and trimming tools and devices of all kinds can be developed on-site as quickly as possible according to customer requirements. Die modifications, which are necessary in received projects, can be carried out cost-effectively and quickly, thereby avoiding disruption to production supply.

In particular recent investment in state of the art 5-axis high-speed milling machines and erosion machines has enabled the workshops, particularly at the Regensburg site, to work highly effectively and cost-efficiently. This has enabled the Wolf Group not only to fully cover their die requirements, but also to offer its expertise, acquired over many years, to external customers in the form of die preparation.



In-house toolshops

Fast, tailored solutions for individual requirements

A coordinated exchange of personnel between the German and Hungarian sites has enabled continual cross-plant development for the specialists. Seamless communication between the development division, foundry and workshop ensures rapid tool repair and optimisation and contributes to the continual improvement process of the die casting moulds and their lifetime.



At a glance

- **In-house toolshops at the German and Hungarian sites**
- **Shortest lead times for prototype and series production tools**
- **Continual exchange of expertise between the departments and sites**
- **Creation of low-wear die-casting moulds with long useful lives**
- **Production of die-cast and trimming tools also for external customers**





The Wolf Group's die-casting capacity

Global options for a comprehensive product range

The Wolf Group is currently able to produce die-cast components using over 50 casting cells worldwide, with a closing force of between 100 - 1300 tonnes. The highly automated foundry at the Regensburg site allows for extremely cost-effective high volume, high-grade serial project production. The manageable size of the Regensburg foundry allows innovations to be developed in-house, for subsequent serial launches at the group's international sites.

The relocation of the Regensburg plant to an industrial area, planned in the medium-term, will enable die-casting cells with a closing force in excess of 2000 tonnes to be operated. This in turn will allow the Wolf Group's product range to expand.





At the Hungarian Prec-Cast site all Group zinc components are produced on four hot-chamber die-casting machines. For aluminium there are die-casting cells with varying degrees of automation. At this site the Wolf Group can therefore produce products cost-effectively in small runs on equipment with manual extraction as well as high-volume serial components on fully linked die-casting cells extremely economically.

Automated spraying, process control and vacuum support of machines are standard here, guaranteeing consistent quality. Thanks to the forward-looking investment policy of the Wolf Group, the Prec-Cast plant uses die-casting cells of the latest machine generation.

The ever expanding Chinese site Prec-Cast Zhongshan operates die-casting cells with medium closing force. It manufactures automotive and non-automotive parts for both the Chinese and international markets. Naturally, the same high standards apply as in Europe for quality and processes in semi-automated production.



At a glance

- **Worldwide production using more than 50 die-casting cells with a closing force of between 100 - 1300 tonnes**
- **Product range to include minimum 2000 tonne die-casting machines in the medium term**
- **High process reliability and quality levels on fully-automated casting cells**
- **Economic production of high-volume serial parts as well as small and limited runs alike**
- **All standard aluminium and zinc die-casting alloys cast**



Machining on an international level

Guaranteed quality through state-of-the-art process development

All Wolf Group sites offer mechanical processing of castings. The heavily automated machining department at the Regensburg plant uses state-of-the-art multi-spindle machines, which ensure a high degree of machining production depth. As a result the CNC milling components for high volume projects are handled in exactly the same way as small batch sizes with higher complexity levels. Rotationally symmetrical components are also produced in Regensburg on fully linked installations.

At the Hungarian Prec-Cast site raw parts are processed using over 25 CNC machines. Standard machines of various sizes and formats as well as multi-spindle machines ensure maximum flexibility and productivity. A range of product-specific machines and rotary transfer systems ensure extremely quick and economical machining with high batch sizes. Segment production was introduced for selected product ranges to further increase productivity and quality. As a result, die-casting cells, vibratory grinding, machining and logistics are all inter-linked. A specialist team is fully responsible for processes and quality for the product range, which gives it a completely new understanding of the parts.

At our Chinese plant mechanical machining is performed on high-tech CNC milling centres and also product-specific machines.

Initial sampling and serial measurements using state-of-the-art 3D coordinate-measuring machines, as well as process inspection using CAQ systems, are standard throughout the Group.





At a glance

- **Machine finishing of cast parts at over 35 CNC cells world-wide**
- **Milling parts and rotation-symmetric products offered on state-of-the-art CNC centres**
- **High degree of machining on multi-spindle machines and product-specific machines**
- **High staff quality awareness levels in product-specific segment production**
- **CAQ system supports routine inspection and process control**





For the desired finish

System supplier with first-class surface and assembly processes.

All the Group sites offer classic casting surface treatments such as vibratory grinding and shot-blasting as standard. The deburring methods used vary depending on the component in order to fulfil the finish and the subsequent processing requirements.

All Wolf Group sites work with selected partners for further component and surface finishing requirements. Along with the impregnating of pressure-tight components and the secondary removal of burrs using thermal or electrochemical deburring, different processes for surface finishing or protection.





At a glance

- **Offers all surface finishing and protection**
- **Critical logistical advantage through the close proximity of surface treatment services**
- **Comprehensive customer-specific semi-automated and fully-automated assembly procedures**
- **Wolf Group is a full system supplier inclusive of surface technology and assembly**



The Wolf Group was able to secure a partner exclusively for our Hungarian site, who built their factory in close proximity to the Wolf site. This gives us a strong logistical advantage over our competitors, an advantage from which our customers naturally benefit.

Surface treatment applications, such as chromate conversion coating; anodizing and phosphate conversion coating as well as painting; powder coating and cataphoretic painting, is incorporated in the Pre-Cast production process, thanks to the direct proximity.

The Group naturally offers numerous assembly processes along with the surface finishing of parts. These range from simple fitting of sockets to complete assembly of finished modules on semi and fully automatic devices.

The Wolf Group has emerged as a reputable system supplier for the automobile and electrical industry, offering its customers consistent high standards of quality worldwide.





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